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VOL 6 NO 2

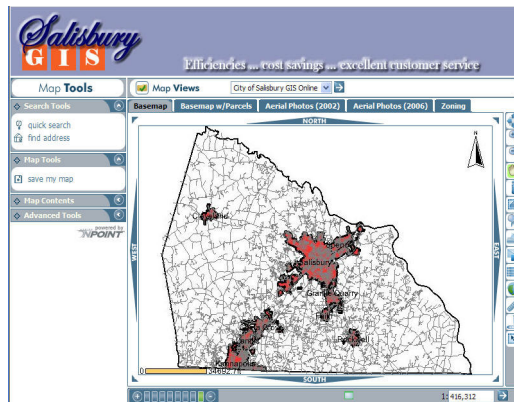
### GIS DIVISION NEWS

#### A New Way to View Rowan County

At long last, the online viewer serving the City of Salisbury is available to the general public. The online viewer was built using OnPoint (version 5.03), a product available from Orion GIS of Richmond Hill, Ontario Canada. To visit the City of Salisbury Online Map Viewer, visit <http://gis.salisburync.gov/maps>.

OnPoint is available in Lite, Standard, and Professional versions. OnPoint may be used to develop multiple custom applications. Proceeds from the GIS classes held at the Salisbury Training Center enabled the GIS Division to purchase OnPoint Standard. Not long after Salisbury purchased OnPoint, Cabarrus County and the City of Concord decided to implement OnPoint as well. They were very gracious to allow GIS Coordinator Kathryn Clifton

See **Online Viewer**, Page 7



### GIS REGIONAL NEWS

#### NCGIS Conference : A Look Back



March 1-2, 2007 at the Benton Convention Center in Winston-Salem, NC the halls filled with GIS professional primarily from the Carolinas. This year was the 10th anniversary of the conference that meets biennially. The planners took the opportunity to explore how spatial vision has changed over the past 20 years.

The conference gathered the expertise of those who have been in the profession for the entire duration and coupled it with the innovation of those fresh on the scene to offer numerous concurrent sessions on a multitude of geospatial topics.

The City of Salisbury was able to send four employees to the conference: Trey Cleaton, Benita Staples, Kathryn Clifton and Jeff Jones. Three of the employees share some of their experiences during that conference.

See **Conference**, Page 7

### GIS SPOTLIGHT

#### Guest Instructor Visits Salisbury

By Ken Juengling, GTC, Inc

On the way back to my home office, I began to reflect on the teaching experience that I just had at the City of Salisbury, NC. From the moment that I arrived at the building until the last student departed at the end of the class, I can honestly say that folks were SO hospitable and eager to learn. Driving the short distance from my hotel to downtown Salisbury, I noticed how historic the town was and how cozy this made me feel. While waiting outside for the building to "open" I was greeted by a city employee who asked if I needed to get inside for the GIS class. After brief introductions, I was welcomed inside and preceded to the training room located on the fourth floor of the building.



Ken Juengling  
Visiting Instructor

See **Guest Instructor**, Page 2



Ken Juengling instructing the Python Class

Riding up the old, yet solid, elevator I wondered what type of training facility may be housed in such an historic building. At the end of the hallway, I was pleasantly surprised to find a first-rate training room complete with modern amenities and plenty of space for students to work on the computer workstations. I have taught at many (and varied) labs around the country. One of the more memorable ones:

Once I was invited to teach at a facility in XXXX (location withheld – overall it turned out to be a great class in the end). Upon arriving the evening before, I received a phone call from the host that I was needed in the lab to help with the set up (this is not an uncommon request, as I am armed with an ESRI ArcEditor lab kit – enough licenses and keycodes to set up a 15 student lab). Upon arrival at the lab, around 8 PM, we discovered that the computers were not as prepared as we had hoped. The software was not loaded and the operating systems were not the same. Long story short – after pulling an

“all-nighter” with my host to wipe each machine and build it from the “ground up” with software and licenses and student logins, we finished by 6:30 AM – just in time for me to check into the hotel (a day late), grab a shower, and return to teach the class.

I share this brief story only because the City of Salisbury, NC lab was COMPLETELY prepared and the experience could not have gone smoother - everything worked perfectly and my host (Kathryn Clifton) had prepared a script to install the student data on every machine to save valuable class time. With a small class of seven students from various Counties and Councils of Government (COGs), we were able to have plenty of one-on-one to pick apart the Python script issues that came up in the normal course of the class.

Another observation that I will share:

I noticed a GIS newsletter (a stack of copies on the instructor podium) available for the students. Any time that I come across such a document in my travels, I know this is an indication of commitment toward communication and leadership to ensure that GIS is a success in an organization (or group of organizations). What a treat to scan through the newsletter and see several of the students in my class highlighted! With this kind of information sharing, only good things can come of it. Early in my career (89/90) at the State of Oregon, we were facing challenges in justifying our program existence and spreading the word about the capabilities of what GIS can do. One of the first things we started was a newsletter – complete with examples of GIS in use and “technical tidbits” to share with others so they will not have to reinvent the wheel. This helped immensely and helps others to become more informed of “GIS happenings” in the professional community.



Students in the Python Class.

Having taught hundreds of classes all over the country, I can say that the Salisbury, NC facility is one spot that I would be eager to come back knowing that it is a top-notch facility supported by an excellent host. The students (though I only experienced a small sample) are bright, anxious to learn new material, and ask great questions to really figure out issues.

Thank you, City of Salisbury, for having me down to conduct a class. I really enjoyed presenting the material and meeting so many “movers and shakers” in your region.

Kenneth C. Juengling – President  
Geospatial Training and Consulting, Inc.  
<http://www.gtcgis.com> ♦



## The Beauty of Georeferencing

By Benita Staples, GIS Technician

Georeferencing is defined as the act of aligning geographic data to a known coordinate system so it can be viewed, queried, and analyzed with other geographic data. Georeferencing may involve shifting, rotating, scaling, skewing and in some cases warping, rubber sheeting or orthorectifying the data. That is exactly what the City of Salisbury GIS Division is having the opportunity to do with its new project.

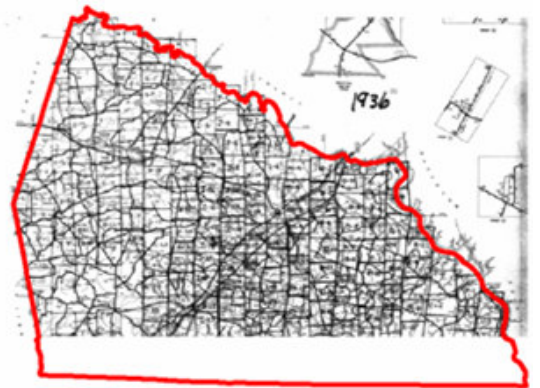
Jeff Jones, Salisbury-Rowan Utilities, Planning Engineer, was propositioned by the NC Department of Agriculture to use the city's large image scanner in order to create a record of numerous paper maps that were aerial photography of Rowan County from 1936, 1950, 1956, 1981, 1985, and 1988. A deal was reached where the NC Department of Agriculture could use the image scanner to create a record of these maps only if the city was allowed to keep a copy. Now the city has map images of Rowan County that span a broad range of time. GIS Technician Benita Staples is working to piece all the images together. This could prove very useful in the analysis of how the city/county has changed and grown over time.

The next step in the project is taking on georeferencing and piecing together these numerous images to create a map that can be viewed, queried and analyzed in context with the GIS data that the city currently possesses. This is no easy task; nor is it quick.

See **Georeferencing**, Page 4



Index Map of Rowan County in 1936.



1936 Index Map georeferenced with county boundary

## MORE GIS DIVISION NEWS

### Salisbury Works to Continue to Encourage Economic Development

By Kathryn Clifton, GIS Coordinator

William S. Lee Credits for businesses located in the State Development Zone were repealed for business activities that occur on or after January 1, 2007. These credits have been replaced by Article 3J Credits for businesses located in newly defined Urban Progress Zones (UPZ). Businesses previously receiving Lee Credits may continue to do so until December 31, 2007.

In July, 2006, the NC General Assembly passed legislation (House Bill 2170) that created a new tax credit program, Article 3J Credits. Article 3J provides two types of tax credits to eligible taxpayers in Rowan County (a tier 2 county) that undertake qualifying activities in North Carolina: 1) Credit for Creating Jobs and 2) Credit for Investing in Business Property. An additional credit is available for Investment in Real Property, but it is applicable only to tier 1 counties.

Municipalities with a population of at least 10,000 have the ability to define qualifying areas of poverty as Urban Progress Zones.

Only eligible businesses may qualify for Article 3J Credits, which includes: aircraft maintenance and repair; air courier services hub; company headquarters that creates at least 75 new headquarters jobs; customer service call centers; electronic shopping and mail order houses; information technology and services; manufacturing; motorsports facility; motorsports racing team; research and development; warehousing; and wholesale trade.

See **Economic Development**, Page 9

#### Rowan County

■ Tier 2

#### Wage Standard

■ \$564 avg. weekly wage

#### NC: 100 Counties

■ Tier 1 > 40 most distressed

■ Tier 2 > next 40

■ Tier 3 > 20 least distressed

Tier system designed to encourage economic activity in the less prosperous areas of the state.

## USER INSIGHT

### Comments & Suggestions Welcome

Your comments and suggestions for *GIS In the News* would be greatly appreciated. Also, if you have a question about GIS, its uses, software, etc. please submit them as well. Just send an e-mail to Kathryn Clifton with the subject "GIS In the News". ♦



"A number of astronauts, and then all of us who saw the photography from space, marveled at how much the Florida peninsula, meandering Mississippi, the islands of Britain, and the boot of Italy resembled the maps everyone had grown up with. We had taken it for granted that maps were faithful reflections of reality; but we were somehow amazed when reality turned out to be true to the maps."

John Noble Wilford, The Mapmakers



### ...Georeferencing (from page 3)

Each set of maps scanned has an index map that corresponds to that year and divides the county into sections. Each image is labeled in its top right corner to correspond with a section on that year's index map. First the index map must be georeferenced in the GIS by matching certain features of the index map (boundaries, streets, bodies of water, etc.) to features already in the GIS with a coordinate system already established using the georeferencing toolbar.



Image showing how scanned images are matched to locations on the index map.

Next the map images scanned are georeferenced in the same manner as the index map by matching recognizable features (a minimum of three reference points are required). The tricky part is that, for example in 1936, there just weren't that many features, therefore many of the scanned images were matched by using intersections of main roads; this gets better as the years progress because there are more reference points to choose from and the photography improves.



Image showing how reference points are matched to align the scanned images with the already georeferenced index map.

After all of the images scanned have been georeferenced more editing has to occur so that any of the overlap between the images is erased. After all of this work, the beautiful part of the whole process will be the end when the final product will be full color maps of Rowan County over time that will serve in many capacities to benefit multiple departments of the City of Salisbury, as well as, Rowan County.

However, we are not that far just yet and we will continue to edit and georeference images and watch the beauty unfold one reference point at a time.

For more information on this project, contact GIS Technician Benita Staples at 704.638.2159 or [bstap@salisburync.gov](mailto:bstap@salisburync.gov) or visit the ESRI website <http://www.esri.com> to learn more about georeferencing ♦



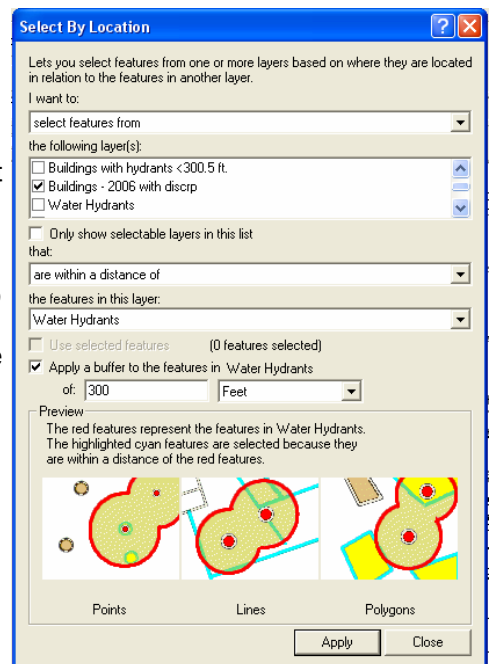
## Putting GIS to Good Use for the Fire Department

By Marshall Moore, Captain, Salisbury Fire Department

Mastering the full abilities of our ArcMap GIS software is becoming more of a reality everyday. One of the greatest challenges in my job, as Projects Analyst with the Fire Department is annexation studies, as well as, recently preparing for an ISO fire review. Chief Parnell wanted to identify buildings that did not have a fire hydrant within 1000 feet. I used the recent Rowan color ortho's and the building footprints to develop a map. I added the building footprints to my study map as well as the hydrant layer. I first selected the buildings within the city limits. I then made selections by location based on hydrants that were 300.5' or less, 300.5' to 600' , 600' to 999' and then any over 1000' from a building footprint.

Next, I then saved each selection as a shape file. then coded the ranges like our hydrant color-coding. Blue for < 300.5', green 300.5' to 600', yellow 600' to 1000' and red for >1000'. I then made sure the shape file order in the display had the longer distant shapefiles at the top and descending. This allowed the longer distance to hydrants building footprints to show on top in red was and so forth. The resulting map made is very clear where we had buildings needing hydrants so they were properly covered. Thus, this map made it very easy for Fire Chief Parnell to convey his need for hydrants to the Salisbury-Rowan Utilities .

See **Fire Department**, Page 8



Selection by location, selecting buildings that are within 300 feet of a hydrant.

## GIS CALENDAR

### Don't Forget!

The GIS Users Group Meetings are scheduled to meet the third Friday of every other month at 9:00 AM at West Innes Street (The Plaza) in the second floor conference room. These Meetings are open. Anyone with an interest in GIS is welcome to attend. As always, refreshments will be served.

**Upcoming Meeting Dates:**

- June 22, 2007
- August 17, 2007

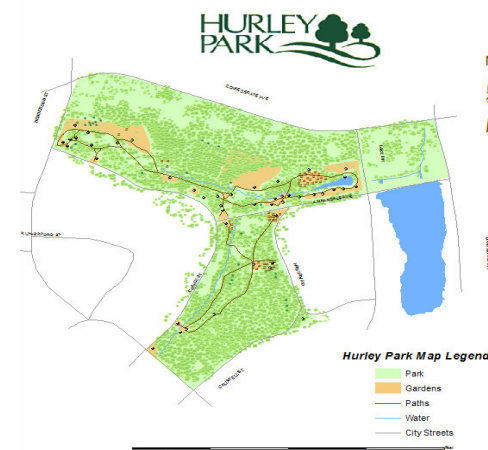
See the online GIS calendar ([http://gis.salisburync.gov/gis\\_calendar.asp](http://gis.salisburync.gov/gis_calendar.asp)) for additional important dates. ♦



## GIS SPOTLIGHT

### Hurley Park Benefits from GIS

By Daphne Beck, Park Curator



Hurley Park Map created by GIS Division

Over the past year and half, the GIS Division has reproduced both the Hurley Park brochure and map. The advantages are two fold: first, changes can be made to the brochure and map as needed. For instance, updated photographs can be added to the brochure and garden names can be added on the map. Secondly, doing the work in house has reduced the cost of printing the brochure and maps used for display in the Park.

I foresee where perhaps in the future specific tree locations and garden plantings could be located on the Park's map. This could then be tied to the Park's accession records and photographs to provide visitors with information about these specific areas.

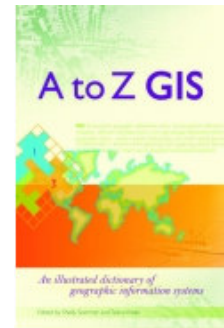
To learn more about Hurley Park, contact the Hurley Park curator at (704)638-4459. ♦



Front cover of Hurley Park brochure

**New Titles Added to the GIS Library**

The GIS Division Library is growing. We have added two new titles: *A to Z GIS* and *GIS and Land Records*. *A to Z GIS* presents the most comprehensive collection of GIS terms and illustrations to help students, educators, and professionals understand and use the special language of GIS in research, field studies, and real-world applications. *GIS and Land Records: The ArcGIS Parcel Data Model* is the definitive book about the data model developed as a framework for land record information in an ArcGIS environment. It captures the collective experience gained from more than 20 years of managing parcel information using GIS. The library consists of various resources (articles, books, maps, etc.) on topics in GIS that will appeal to a broad audience.



Currently the library has material on hand to benefit staff and to be loaned out in the following categories:

- Administration
- Engineering
- Utilities
- Management Services
- Community Outreach
- Fire
- Community Development
- Planning
- Development Services
- Human Resources
- Public Services
- Police
- GIS Reference

For more information or to borrow materials from the library, stop by the GIS Division at City Hall on 217 South Main Street or contact GIS Technician Benita Staples at 704.638.2159 or [bstap@salisburync.gov](mailto:bstap@salisburync.gov). ♦

## GIS NEWS

**State Your Address and Be Counted****U.S. Census Bureau**

Is it time already? The Local Update of Census Addresses program, also known as LUCA, is a decennial census geographic partnership program between the US Census Bureau and local governments. The Census Bureau goes to the source (local governments) in order to benefit from local knowledge in developing its Master Address File (MAF) for the 2010 Census. The Census Bureau uses information provided by local governments in an effort to create a complete and accurate address list of residences for the Census Bureau to deliver questionnaires within their area.

GIS Coordinator Kathryn Clifton and GIS Technician Benita Staples recently attended a training session in Winston-Salem that introduced the different options for participation in the program and the requirements of each.

This marks the second LUCA effort for GIS Coordinator Kathryn Clifton. During the last Census update, address information for Salisbury was available only in paper format. That meant pouring over printed address lists, paper tax maps, and address files in the Land Management & Development Department Development Services office. It was not an easy task, even with the help of multiple volunteers from the GIS Users Group. With that grueling task behind her, Kathryn resolved to have a much better solution in place for 2010.

So, what will the process entail this time? The process should be much easier, thanks in large part to a GIS master point address file. Address information received in a digital format from the Census will be geocoded (address-matched) against the GIS master point address file. This process will help the GIS Division staff to identify addresses that the Census has on file that do not match information maintained by the City, and also to identify addresses that the City has on file that are not present in the Census address list. Addresses that do not match will be researched by GIS Division staff.

The key to this automated review of Census addresses is the GIS master point address file. The creation of this point address file came about when Police officers were asked to drive the City during the normal course of their work and complete mapbook pages that indicated addresses in the field. This information was then compared to information on paper maps in the Development Services office, and the address information that Rowan County had on file for that parcel. If all three data sources matched, then the address would be input into the master point address file for the City of Salisbury. If not, then GIS Division staff would investigate that address further with assistance from Development Services. This project has spanned three years, and over 16,500 addresses have been identified.

Why the focus on addressing? Nearly every function in a local government entails the use of an address. Multiple departments benefit from the development and maintenance of a master point address file that is shared throughout the City. Another key element in this project is that many funding sources – both federal and state – are based upon population for an area. Making the most accurate address information available to the Census Bureau ensures that a more precise population may be determined for the City of Salisbury. ♦

### ...Online Viewer (from page 1 )

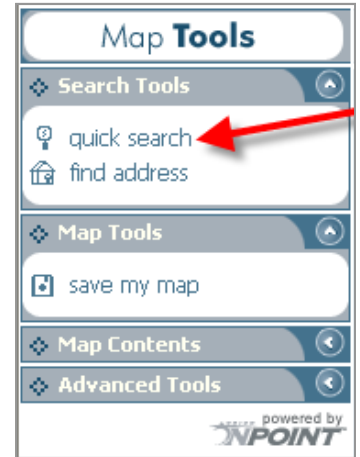
to attend the training session to better understand how to customize the OnPoint interface.

The new online viewer is hosted by the City of Salisbury on the GIS webserver, meaning that updates and “tweaks” are more easily implemented internally by GIS Division staff. Also, data that serves the viewer is updated regularly – Rowan County data is updated monthly, and City of Salisbury data is updated weekly. Aerial photography from both 2002 and 2006 is available by clicking on the appropriate tab.

Ease of use was of primary concern in developing the online viewer interface. It needed to be intuitive for the user. To this end, address searches may be performed by entering the street number and a portion of the street name. If the correct spelling of the street name is unknown, the user may simply input what he or she knows and click the “Lookup” button so that a list of potential names is presented. Other quick searches are available as well by accessing the Map Tools on the left-hand side of the screen. Users may search various data layers by Parcel ID, Parcel Owner, Zoning, Street Name, or Municipality.

The GIS Division welcomes comments and suggestions on the new online viewer. One project that should soon be complete is comprehensive, online documentation for the viewer. As time permits, additional internal and external applications will be developed.

For additional information about OnPoint, visit <http://www.orion-gis.com>. ♦



You can search for various information on the website.

### ...Conference (from page 1)

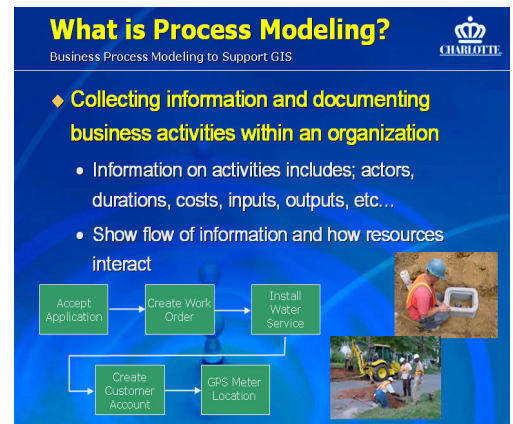


Trey Cleaton  
GIS Analyst

#### An Opportunity to Learn and Apply GIS

It was that time of year for the much anticipated North Carolina GIS conference. Held at the Benton Convention Center in Winston-Salem, the biannual event brings together professionals from the geospatial field to share cutting edge practices, methods and trends to further promote and advance the GIS discipline. There were several concurrent presentations throughout the day, each focusing on a different aspect of the use of GIS in the public and private sectors.

An interesting session that applies to Salisbury in particular was “Business Process Modeling to Support GIS”, presented by Rob Bailey, with Charlotte-Mecklenburg Utilities. The theme was simple; how can we transition from everyday tasks that may require huge time and manual practices to using GIS in their workflow? For instance, in Salisbury’s Utility Department, many utility assets are installed and maintained through a workflow process involving large amounts of paper forms. At the end of each task the documentation is filed in a central filing cabinet. Since these assets have a geography (water and sewer lines, manholes, valves, etc), with information tied to them (size, material, date installed, etc) the process can be managed within the City’s GIS database. Salisbury should continue to assess the everyday business processes of its many departments to better understand and integrate GIS into the workflow. Despite the learning curve and implementation time, the return on investment and increased efficiencies are huge.



Slide from the Session Presentation



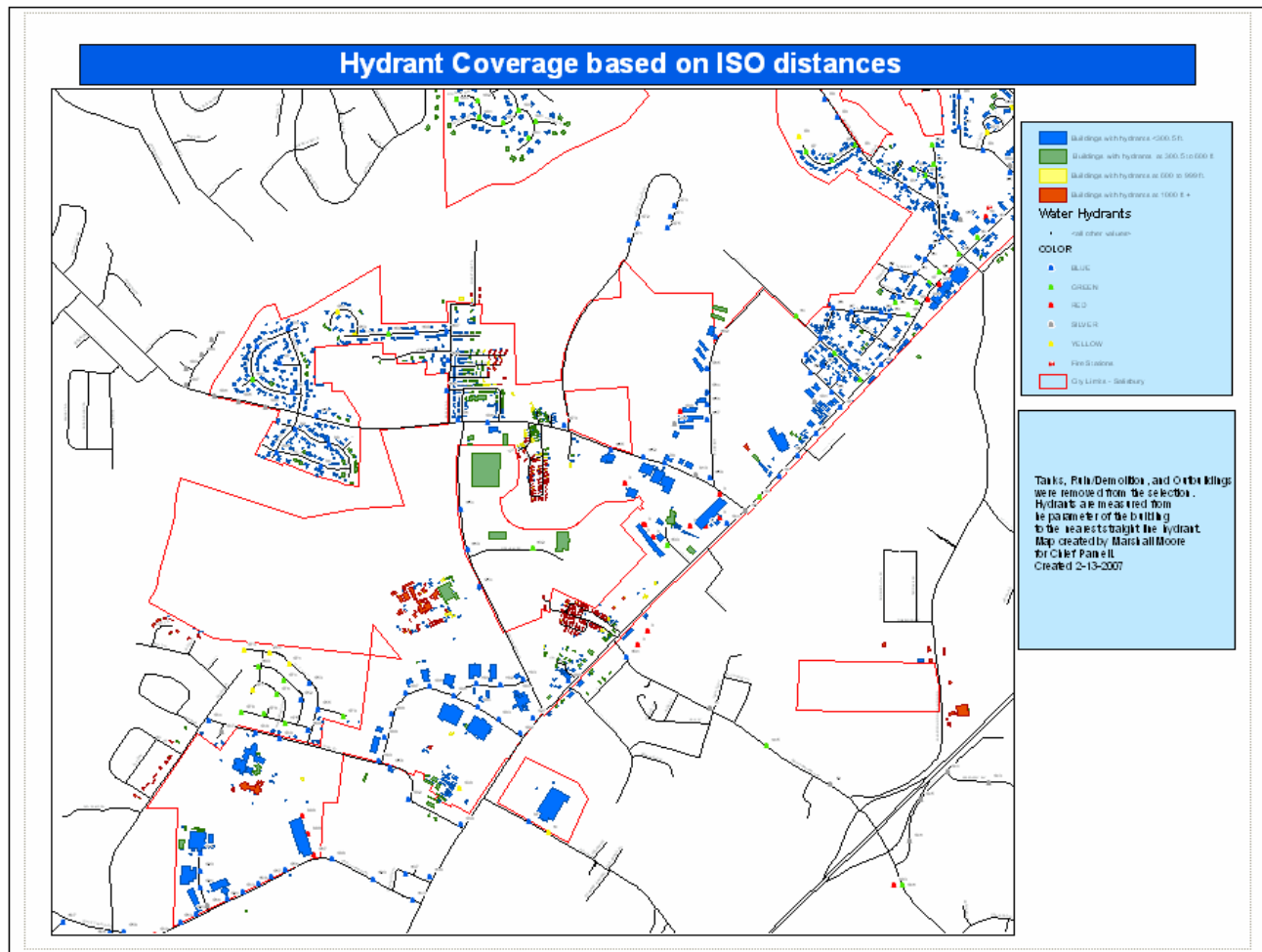
Kathryn Clifton, GISP  
GIS Coordinator

#### The Place to Recognize the Potential and Success of GIS

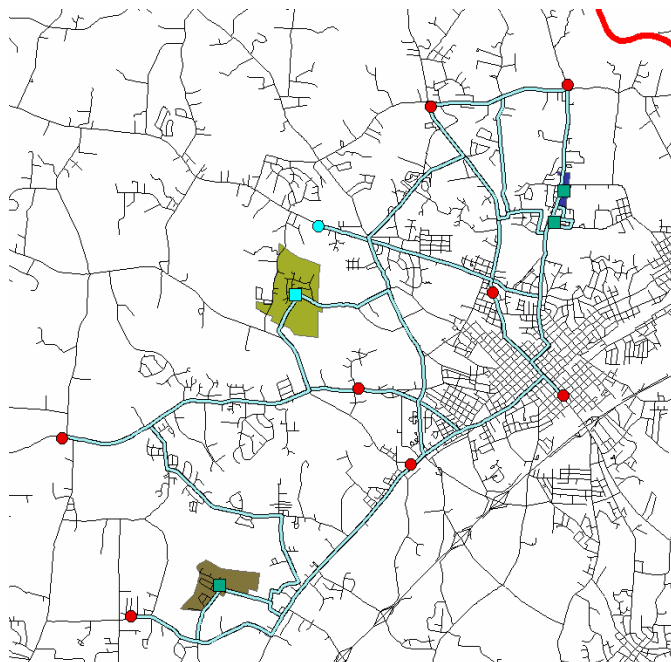
Attending the 2007 NCGIS Conference this year was very exciting. Nearly 1,000 people were there – primarily from across the state of North Carolina, but also from South Carolina and other neighboring states. GIS professionals in the Southeast recognize the NCGIS Conference as “the place to be.”

See **Conference**, page 11





The southern section of the city where the need for more hydrants is shown by the red building footprints.



July 2007 annexation study areas with routes to the all city and county stations that currently serve the areas.

In the most recent annexation studies, I had a request from Fire Chief Parnell to get all the distances for the annexation study areas to all the city fire stations and the current county fire departments that serviced these areas. This was for the public meeting with the residents of the annexation study areas. I wanted to make this report as accurate and timely as I could. I chose to use ArcMap and the Network Analyst tool extension to accomplish this task. Kat and I worked on this map and made centroid points in each zone and named the point as the name of the annexation area. These points represented the incident points. We then loaded a shape file of fire station points, and selected the desired stations. We then used Network Analyst to create nearest facility routes. In the resulting analysis, the routes are defined, times and distances are measured and reported to each fire station to the centroid of the annexation study. One problem was figuring out how to make the Network Analyst include all stations was the number of facilities choices in layers properties. Once the solve was selected, I used the attribute table to export the data table to a dbf file, then used Excel to massage the data into a format favorable for the Fire Chief.

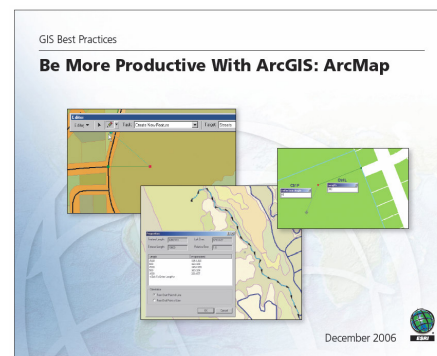
For more information on this project and the Fire Department please contact Captain Moore at [mmoor@salisburync.gov](mailto:mmoor@salisburync.gov). ♦



## GIS Greatest Hits

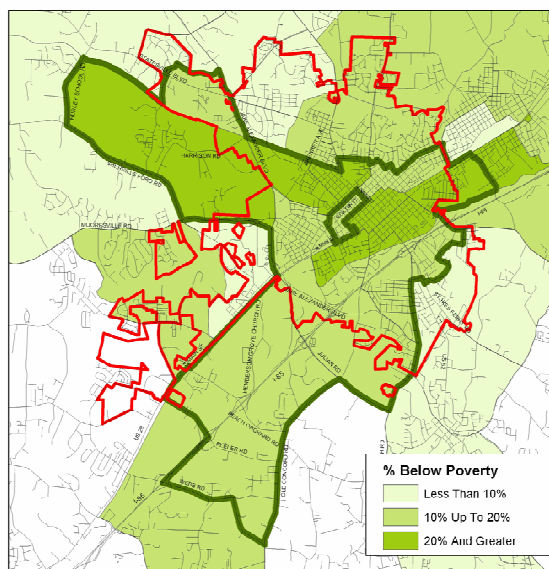
ESRI is offering booklets that present a collected resource of best practices. The booklets gather articles on innovative uses of GIS in specific industries or ways to be more productive with ESRI software. ESRI even goes one step further by making them instantly available online at no cost!! Published as PDFs these booklets can be read online at the ESRI website or downloaded and printed. The GIS best practices booklets are available on a variety of topics, such as public works, law enforcement, and ArcMap editing tips and tricks. More than 20 titles will become available throughout 2007.

For a complete list of GIS best practices booklets currently available for download, please visit [www.esri.com/bestpractices](http://www.esri.com/bestpractices). ♦



Example of booklet offered by ESRI

### ...Economic Development (from page 3)



State Development Zone Jan. 1, 2006 - Dec. 31, 2007

The designation of Urban Progress Zones is a little more complicated than the former State Development Zone. One primary difference is that all land within the zone \*must be\* located in whole within the primary corporate limits. The previous State Development Zone covered a large area, extending out into Rowan County and also into the town of East Spencer.

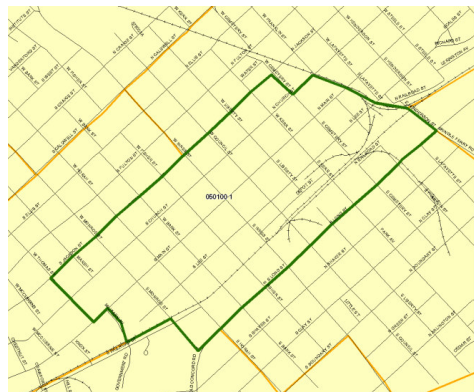
Proposed Zone Name	Area of Zone
Downtown	0.40 square miles
Industrial Avenue	0.87 square miles
W Jake Alexander Blvd	0.22 square miles
Total for All Zones	1.49 square miles

Proposed Urban Progress Zones cover much less area than State Development Zone.

An Urban Progress Zone must be delineated by Census tracts or block groups (all, or portion within the City limits) that meet certain criteria. A Census tract or block group qualifies if it has 20% or more population below the poverty level, or if it is adjacent to one that has 20% or more

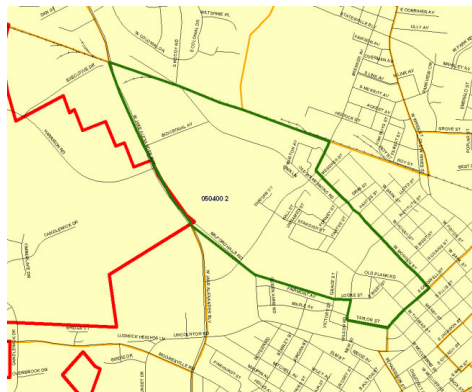
population below the poverty level and 50% of the area is zoned non-residential. And finally, the area zoned as non-residential may not exceed 35% of the total area of the zone. Limitations do exist in the designation of Urban Progress Zones. The UPZ(s) can only exist inside the primary corporate limits. And, the total area of the UPZ(s) may not exceed 15% of the total area of the municipality, which for Salisbury means three square miles.

To date, three applications have been completed for the designation of three different UPZ(s) within Salisbury. ♦



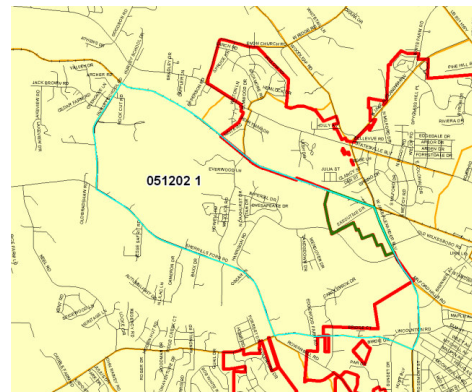
#### Proposed Downtown UPZ

- Census Tract 0501 Block Group 001
- 36.2% below the poverty level
- Will support call centers, warehousing and smaller manufacturing operations



#### Proposed Industrial Avenue UPZ

- Census Tract 0504 Block Group 002
- 32.46% below the poverty level
- Will support Commercial & Light Industrial development



#### Proposed W Jake Alexander Blvd UPZ

- Census Tract 51202 Block Group 001
- 20.146% below the poverty level
- Will support existing company headquarters

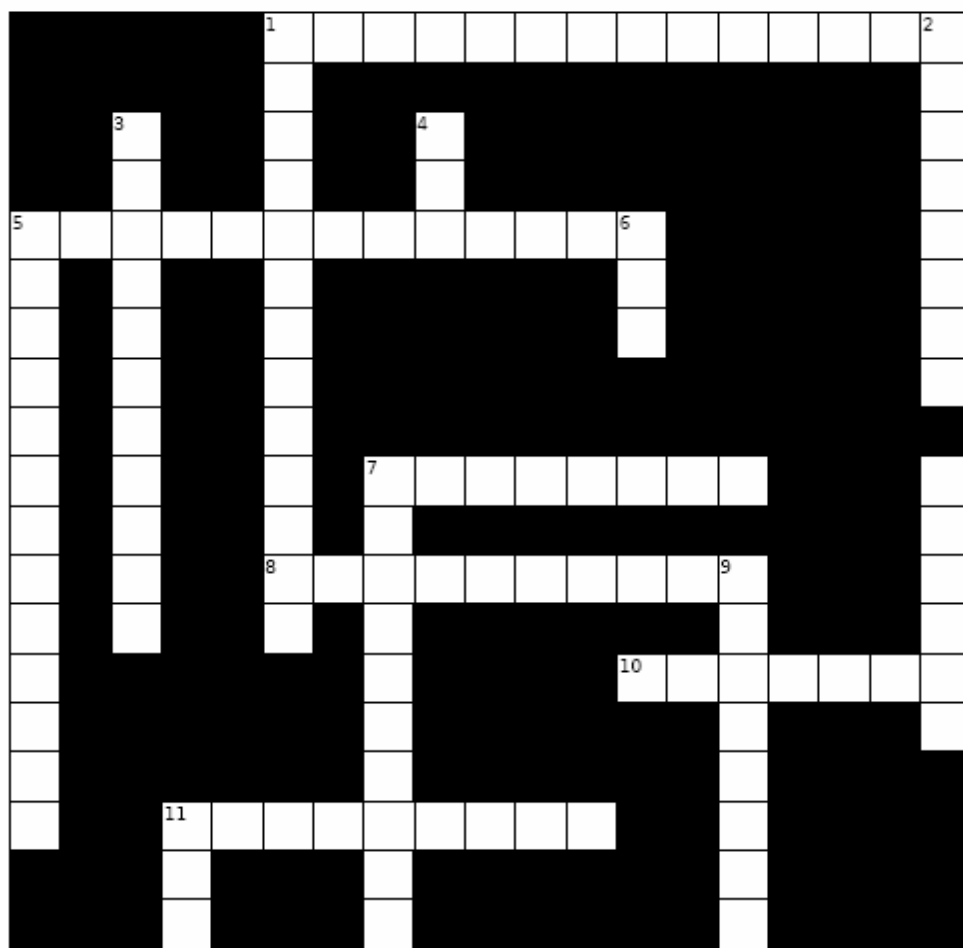
### Across

1. Aligning geographic data to a known coordinate system
5. A GIS operation used to manipulate GIS data
7. The measures and properties of points, lines and surfaces
8. A treasure hunting game where you use a GPS to hide and seek containers with others
10. To assign a street address to a location
11. The study of Earth's surface encompassing the description, interaction and distribution of various physical, biological, and cultural features

### Down

1. The study of the nature and origin of landforms
2. A survey that takes the shape and size of Earth into account (2 words)
3. GDB
4. Geographic Information System
5. This type of satellite will orbit as fast as the Earth rotates on its axis so that it remains above a specific point on the equator
6. Prefix meaning Earth
7. Having the Earth as center
9. The shortest distance between two points on a spheroid
11. Geography Markup Language

## The GEO Edition



Answers to the crossword puzzle will be printed in the next newsletter edition

### GIS Crossword Answers

January 2007

#### Across:

4. Snapping
7. Two
8. Choropleth
9. Feature
11. Clifton
12. Pan
13. Attribute
14. Analysis
16. Field
17. DBMS

#### Down:

1. Contour
2. GPS
3. GISP
5. Geodatabase
6. Metadata
10. ESRI
15. Legend

# Need GIS Training?

See page 14 for details...

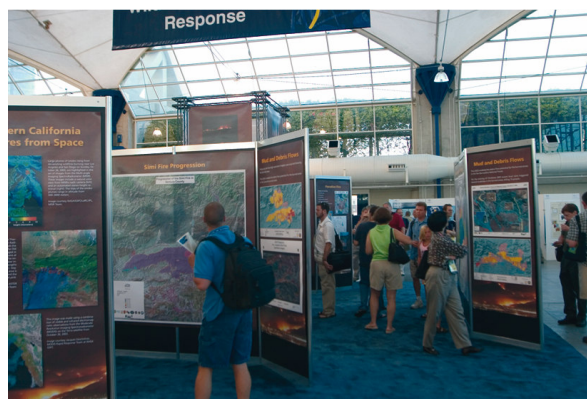
### GIS NOTES

#### Showcase Your Mapmaking Talents

The maps you create using ESRI software often look beautiful and impart important information. If you want to share your work with others, and would like to showcase your ability to use GIS, submit your map presentation to the popular Map Gallery exhibit at the 2007 ESRI International User Conference. You can enter as many maps as you choose. Many of these maps will also be selected and published in the annual ESRI Map Book. The submission deadline is May 16, 2007.

To learn more on submitting your map for the please visit:

<http://events.esri.com/uc/2007/mapgallery/> ♦



Map Gallery at ESRI User Conference.



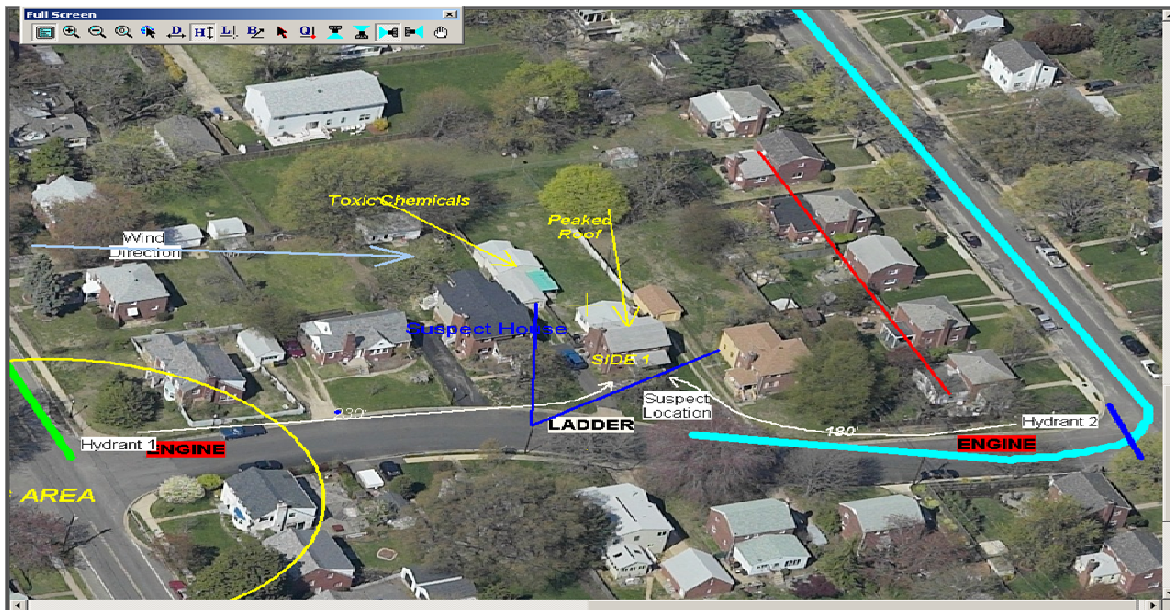
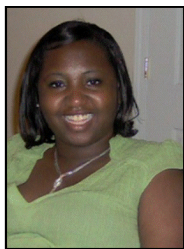


Image of the GIS displaying valuable information that may be used in dispatch or pre-planning.

One session that I found particularly interesting and exciting was “Traveling at the Speed of Life – Decreasing Public Safety Response Times with GIS Technology,” presented by Brian Hood of the City of Lexington, South Carolina. Mr. Hood has numerous years experience in Public Safety, and has seen it evolve significantly during his tenure. Regardless of the technology in place, Public Safety relies upon prompt and reliable address information, accurate additional supporting information, timely response, and the maximization of available resources. Additional supporting information may include parcel ownership, size, and shape; number and size of buildings on parcel; and additional supplementary information – fence, gate and driveway locations, presence of pools, etc.

Lexington, South Carolina – both the city and county – benefits from a GIS-based Computer Aided Dispatch system that provides reliable information with such data layers as addresses, parcels, roads, streams, ponds, contours, floodplains, wetlands, soils, zoning and color aerial photography. Not only is GIS used for dispatch purposes, but also for pre-planning and tactical planning; determining the geographic boundaries of response zones; determining the placement of new fire stations, EMS, and law enforcement substations; and determining standby points for emergency response personnel.




Benita Staples  
GIS Technician

## A Reminder to Keep your GIS Skills Current

The time finally came for me to attend the much talked about NC GIS conference and I was not disappointed. The many sessions, presentations, and vendors allowed a full immersion into what the GIS profession has to offer. The GIS technology, its development, and its application were on showcase the two days of the conference.

Benita Staples  
GIS Technician

This being my first time in attendance, I was trying to soak up everything. As I moved from room to room, one presentation resonated with me the entire conference. Lynda Wayne's presentation on "The Profession of GIS" was unmistakably "must know" information. She went into detail about the creation of the GIS Certification Institute and the push to create a body of knowledge that must exist in the profession. Analytical methods, conceptual foundations, cartography and visualization, design aspects, data modeling, data manipulation, geocomputation, geospatial data, geographic information science and technology (GI S&T) and society, as well as organizational and institutional aspects of GIS are the ten knowledge areas that a GIS professional should have in his or her toolbox. The body of knowledge is intended to be used for course and curriculum planning, educational program comparison, professional certification, academic program accreditation, academic program alignment, and employee recruitment.



GIS Body of Knowledge.



GIS Body of Knowledge.

As I motivated from one session to the next, I was pleased that so many people were using and interested in the technology, development and application of GIS. I was also reminded that if I would – no, if we would like to remain among the GIS profession we must keep and obtain the skills of this “body of knowledge”. ♦

## Are You New to GIS?

### Ten Tips for Learning More about GIS

If you are just starting to use GIS, you will be happy to learn that there are many resources, often available at no charge, that will help you quickly become proficient and productive. The following suggestions will get you pointed in the right direction.

#### 1. Visit GIS.com.

Learn the basic principles of GIS at <http://www.gis.com>. This informative site provides a great introduction to GIS and has links to additional resources.

#### 2. Subscribe to ArcUser and ArcNews.

Read ArcUser to learn how to use GIS more effectively. GIS is a rapidly evolving field. Read ArcNews, the world's largest circulation GIS publication, to learn about what is going on in GIS and where the industry is headed. Subscribe online at <http://www.esri.com>

#### 3. Read an introductory book.

Read *Getting to Know ArcGIS* or *GIS Fundamentals*. Both books are available from the ESRI GIS Store.

#### 4. Join a list serve.

Users share their expertise. Users post problems or queries and summarize the responses they receive from the online community.

#### 5. Take a class at <http://www.esri.com/campus>

The Virtual Campus is an online program that is available to you 24/7 and features courses on using specific software programs, GIS for specific industries, and GIS science. Free introductory modules let you try before you buy. Find out about GIS programs taught near you.

#### 6. Visit the support pages at the ESRI Web site.

Access the latest ESRI software news, downloads, FAQs, and discussion forums

#### 7. Join a user group.

These groups, based on geographic location or interest in a particular industry or software program, hold meetings, workshops, and conferences. They are a tremendous way to learn about GIS and meet people in the field at the same time.

#### 8. Read online help files and work the tutorials.

In addition to supplying step-by-step instructions for using ESRI software, online help includes information on related concepts that will give you a better understanding of the technology. Most programs come with tutorials and sample data.

#### 9. Visit the Geography Network at <http://www.geographynetwork.com>

Access the data you need from this global source.

#### 10. Go to a conference.

Many regional and state GIS organizations hold their own conferences. All these conferences provide new users with great opportunities to listen to presentations, see demonstrations, ask questions, and get some hands-on experience with a variety of GIS software.

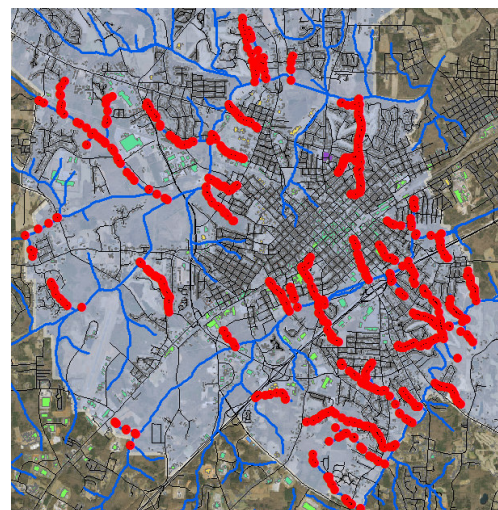
## GIS DIVISION NEWS

### NPDES Update

By Benita Staples, GIS Technician

As we enter into the spring season it is time for our data collection for NPDES to come to a halt. The spring brings about tree canopy cover, sweltering temperatures and most importantly snakes. As the mapping season closes we put away the Trimble GeoXT with a feeling of accomplishment.

Noticeable progress has been made in the collection of storm water discharge points, ditches and pipes along the many creeks that fall within in the City of Salisbury Extra-territorial Jurisdiction (ETJ). Most of the smaller creeks have been mapped, which leaves only the large, wide and deep creeks to plan for in the fall. The outlook is good for the fall, with a clearly defined procedure and the spring and summer to plan for potential obstacles, we look to be on schedule in the three year process. ♦



Red represents points collected in ETJ with the blue line showing the remaining collection sites.

### Did You Know?.....



A GISP is a certified geographic information systems (GIS) Professional who has met the minimum standards for ethical conduct and professional practice as established by the GIS Certification Institute (GISCI). There are currently 1,480 people that are certified GIS professionals—ARE YOU ONE OF THEM? For more information about the requirements for becoming a GISP or to download an application to apply to become a GISP please visit the GISCI on the web at <http://www.gisci.org>. ♦



## APRIL 2007

ESRI Business GeoInfo Summit  
April 23–25, 2007  
Dallas, TX

## MAY 2007

ESRI South Eastern Regional User Group  
May 2 - 4, 2007  
Jacksonville, FL

2007 GeoTec Event : Visualization Energizes Action  
May 14-17, 2007  
Calgary, AB, Canada

URISA GIS in Public Health Conference  
May 20-23, 2007  
New Orleans Marriott  
New Orleans, LA

## JUNE 2007

The 5th International Symposium on Digital Earth  
June 5-9, 2007  
San Francisco, California

NENA Conference and Trade Show  
June 9-14, 2007  
Charlotte, NC

GPS World Conference & Expo  
June 11 - 13, 2007  
Convention Center  
Rosemont, IL

ESRI Survey & Engineering GIS Summit  
June 16–19, 2007  
San Diego, CA

The 27th Annual ESRI International User Conference  
June 18 - 22, 2007  
San Diego Convention Center  
San Diego, CA

## JULY 2007

## AUGUST 2007

URISA's 45th Annual Conference  
August 20-23, 2007  
Washington Hilton  
Washington, DC

## SEPTEMBER 2007

GIS in the Rockies  
September 12-14, 2007  
Denver, CO

The International Map Trade Association  
Annual Conference & Trade Show  
September 23 - 25, 2007  
Sheraton Society Hill Hotel  
Philadelphia, PA

NSGIC 2007 Annual Conference  
September 23-27, 2007  
Madison, WI

2007 Free and Open Source Software for Geospatial  
(FOSS4G) Conference  
September 24-27, 2007  
Victoria, BC

## OCTOBER 2007

Rocket City Geospatial Conference  
October 15-17, 2007  
Huntsville, AL

**Do you know of an event  
that you would like to place  
on this calendar?**

Submit information on events in the GIS  
community to [bstap@salisburyinc.gov](mailto:bstap@salisburyinc.gov)



## ArcGIS 9.2

Training is available for the desktop application ArcView/ArcEditor/ArcInfo 9.2 at the City of Salisbury Authorized Partner Education Center **or on-site at your location.**

**Introduction to ArcGIS I** is a two-day class intended to introduce individuals to ArcGIS and provide the foundation for using ArcGIS. Individuals learn how to use ArcMap, ArcCatalog, and ArcToolbox. The class covers basic GIS concepts, as well as how to create, edit, and maintain spatial data. This course is intended for those who are new to ArcGIS or to GIS in general. Cost: \$600 per person

Class dates for Intro to ArcGIS I: **May 17-18, 2007 8:45am—5pm**

*Additional dates available upon request.*

**Introduction to ArcGIS II** is a three-day class that focuses on spatial analysis, automation of spatial and attribute data, editing, and advanced options for cartographic display. A portion of the class is reserved for carrying out an analysis project and applying many of the new skills and techniques learned in this course. Cost: \$900 per person

Class dates for Intro to ArcGIS II: **May 8-10, 2007 8:45am—5pm**

*Additional dates available upon request.*

**Introduction to Geoprocessing using Python Scripts** introduces the Python scripting language and shows how it can be used to access and automate geoprocessing functionality. Students learn Python scripting syntax, then begin writing scripts to automate geoprocessing operations. Students also learn how to incorporate Python scripts as custom tools in ArcToolbox. Cost: \$600 per person

Class dates for Python: **May 21-22, 2007 8:45am—5pm**

*Additional dates available upon request.*

## Classes Available Upon Request

Other ESRI ATP ArcGIS classes may be scheduled upon request.

- Working with ArcGIS Spatial Analyst
- Introduction to ArcIMS
- Introduction to Programming ArcObjects with VBA

Class size is limited to twelve students. The instructor must have at least two weeks' notice prior to the date you would like to receive training so that adequate manuals, etc. can be ordered. ♦

## CITY OF SALISBURY GIS DIVISION

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